

processing plant contains three fluid circuits: ion exchange, elution, and precipitation and drying

Evaporation ponds could leak. However, ponds are required by regulation to have liners and leak detection systems. Weekly leak inspections are performed and documented. Visual inspections of the pond embankments, fences, liners, and measurement of freeboard are also conducted and documented weekly. Evidence of leakage requires corrective action including

- "\* Sampling the leaked fluid

- "\* Notifying the NRC within 48 hr

- "\* Lowering pond level and investigating liners for leakage

- "\* Repairing the leak and reintroducing water (daily monitoring for leakage is required during

refilling)

- "\* Submitting a written report to NRC within 30 days

All ponds will be designed to store the amount of water discharged to them while maintaining 3 ft of freeboard (i.e., distance from the water level to the top of the embankment). Control structures, such as collector ditches and berms, will be used to prevent surface runoff for events up to and including a 100-year, 24-hour rainfall event from entering the ponds.

An inspection program for all ponds will be implemented in accordance with Regulatory Guide 3.11 (NRC, 2008). Inspections will include (i) daily inspections of the liner, liner slopes,

and other earthwork features; (ii) daily inspections of pond freeboard; (iii) monthly inspections of

leak detection systems or daily checks for water accumulation in leak detection systems; and

(iv) quarterly inspections of embankment settlement and slope stability (Powertech, 2011). If

inspections reveal damage or defects that could result in leakage, this information will be

reported to NRC within 24 hours, and appropriate repairs will be implemented. Significant water

found in the standpipes of the leak detection system will be sampled immediately for chloride

and conductivity to determine whether the water in the detection system is from the pond. If

analysis confirms a leak, a second sample will be collected and analyzed within 24 hours. If the

second analysis confirms a leak, the pond will be taken out of service and the leak reported to

NRC within 24 hours. SDDENR must be also notified of any pond leakage or releases within

24 hours, in accordance with ARSD 74:34:01:04. The pond taken out of service because of a

leak will be drained by transferring its contents to a spare pond until repaired.